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8. "On the Steam-wave." By the Rev. Thomas Boys. Communicated by Charles Babbage, Esq., F.R.S.

The term *steam-wave* is employed by the author to denote that peculiar kind of wave which is generated during the motion of steam vessels on the water; and which he shows results from the combination of two separate sets of waves; namely, those occasioned simply by the progressive advance of the vessel, and which consequently recede from it on each side, nearly at right angles to its course; and those arising from the impulses given to the water by the action of the paddles, and proceeding in the same direction as the vessel itself. He ascribes to the cumulative force acquired by these waves at the parts where they cross one another, the extraordinary violence of effect with which they strike against all obstacles opposed to their progress, and which renders them so formidable to boats and other small vessels exposed to the encounter.

The Vice-President in the Chair stated, that he was directed by the Council to call the attention of the Members present, and through them of any philosophical inquirer who might at present be engaged in the prosecution of experimental research, to the existence of a fund at the disposal of the President and Council of the Society, denominated the *Donation Fund*, of which the dividends are to be applied, "from time to time, in promoting Experimental Researches, or in rewarding those by whom such researches may have been made, or in such other manner as shall appear to the President and Council for the time being most conducive to the interests of the Society in particular, or of science in general;" their application to extend to individuals of every country not being at the time Members of the Council;" and such dividends not to be hoarded parsimoniously, but be "expended liberally, and, as nearly as may be, annually, in furtherance of the declared objects of the Trust."

The fund was instituted by the late Dr. Wollaston, who contributed £2000 three per cent. Consols, and it received the following additions:—from the late Mr. Davies Gilbert, £1000 three per cent. Consols; from Mr. Warburton, £105; from Mr. Charles Hatchett, £105; from Mr. Guillemand, £100; and from the late Sir Francis Chantrey, £105.

The Vice-President in the Chair farther stated, that the dividends in the present year would amount to £140 16s. 6d.

Mr. W. Archibald Armstrong White, F.R.S., present at this meeting, gave £10 to the Donation Fund.

February 10, 1842.

LIEUT.-COLONEL WM. HENRY SYKES, V.P., in the Chair.

Thomas Glanville Taylor, Esq., was balloted for, and duly elected into the Society.

The following papers were read, viz.—

1. "Magnetic-term Observations of the Declination, Inclination, and total Intensity, made at the Magnetic Observatory at Prague." By C. Kreil, Director of the Prague Observatory. Communicated by S. Hunter Christie, Esq., Sec. R.S.

2. "On the Chemical Analysis of the contents of the Thoracic Duct in the Human Subject." By George Owen Rees, M.D., Physician to the Northern Dispensary. Communicated by P. M. Roget, M.D., Sec. R.S.

The author, availing himself of a favourable opportunity which presented itself of examining the contents of the thoracic duct in a human subject, procured an hour and a quarter after death by hanging, to the amount of six fluid drachms, obtained by analysis the following result:—

Water, per cent.	90.48
Albumen, with traces of fibrinous matter ...	7.08
Aqueous extractive, or Zomodine	2.56
Alcoholic extractive, or Osmazome	0.52
Alkaline chloride, carbonate and sulphate, with traces of phosphate, and oxide of iron	0.44
Fatty matters	0.92
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	100.

The fatty matters possessed the same general characters as those of the blood, except that they did not contain phosphorus, as appeared from their yielding an alkaline, instead of an acid ash by incineration. The aqueous extractive differed from that of the blood by giving a ferruginous ash. The salts obtained by incineration from the alcoholic extractive yielded a larger proportion of alkaline carbonate than those of the blood. The author is confirmed, by the experiments he made on the present occasion, in his former views concerning the cause of the white colour of the chyle, which he ascribes to the presence of opake white salivary matter as one of its constituents. The author then gives the results of his microscopical examination of the globules of the chyle, which he finds differ totally from those of the blood. He points out as being remarkable the large quantity of fatty matter existing in the chyle, and constituting an hydrocarbonaceous ingredient, which is constantly being added to the mass of blood, and is very rapidly consumed; as appears from the small quantity of this matter discoverable in the blood itself. The proportional quantity of osmazome in the chyle he finds greatly to exceed that contained in the blood.